REMARKS

Applicants appreciate the courtesy extended to their attorney by the Examiner during the interview held September 15, 2004. Claims 1-84 were originally filed in United States Serial No. 10/749,780 on December 30, 2003. Reconsideration and allowance of claims 1-84 based on the remarks presented herein is respectfully requested.

35 USC §102(a and b)/ §103(a) REJECTIONS

Claims 1-84 have been rejected under 35 U.S.C. §102(a and b) as anticipated by, or in the alternative under 35 U.S.C. §103(a) as obvious over Cheyrezy et al. 6,723,162 B1, or 6,478,867 B1, Pye et al. 6,503,318 B2, or Moersch et al WO 2002016281.

It has been alleged that the cited references teach a composition that comprises hydraulic cement, polycarboxylate dispersant, and structural synthetic fibers. It has further been alleged that overlapping ranges of amounts and control of fiber size absent a showing of critically or unexpected results would have been prima facie obvious to one of ordinary skill in the art.

Applicants respectfully traverse the rejection of claims 1-84 under 35 USC §102(a and b) as being anticipated by, or in the alternative under 35 USC §103(a) as being obvious for the reasons set forth below.

Cheyrezy et al. (USPN 6,723,162) discloses a concrete mixture which includes organic fibers, dispersant, and a cement matrix. The cement matrix includes elements having predetermined particle sizes and organic fibers which have predetermined lengths and diameters.

However, Cheyrezy et al. '162 does not disclose, teach, motivate or suggest to one of ordinary skill in the art to combine polycarboxylate high-range water-reducing dispersant and structural synthetic fibers in a hydraulic cementitious mix, without metal fiber or metal

rod reinforcement, to provide a precast cementitious member with a high early strength. Rather, Cheyrezy et al. '162 discloses the use of metal fibers in combination with organic fibers. The combination of metal and organic fibers is disclosed in Column 5, Lines 5-11, "The "hybrid" reinforcing elements may be produced by combining fibers of various natures and/or lengths. The following illustrative examples more particularly relate to short APV organic fibers (6 mm) and long metal fibers (13 mm) and show a considerable reinforcing synergistic effect is then obtained. Other examples of similar combinations are the following: APV or PEHD short fibers (6 mm) and APV long fibers (20 mm), short steel cords (5 mm) and APV long fibers (20 mm)."

Cheyrezy et al. '162's disclosed reliance on a synergistic effect between organic and metal fibers differs from the present pre-cast or cast-in-place cementitious member. As stated in the Specification of the present application, on Page 4, Lines 8-16, "In the prior art, fibers such as steel fibers, have been used to provide the reinforcement necessary for cementitious members. Inclusion of the steel fibers is of major concern, as it can cause dangerous conditions, such as reduced strength and flexibility of the cementitious members. To reduce the potential for corrosion, steel reinforcement requires a minimum amount of cementitious cover resulting in members of a larger size than members prepared using a corrosion resistant cementitious composition. The replacement of steel fibers and steel rebar by structural synthetic fibers in cementitious members will prevent the potential for corrosion and permit reduction of the size of the cementitious members."

Therefore, as Cheyrezy et al. '162 discloses the use of metal reinforcing elements in its cementitious mixtures it neither anticipates nor makes obvious the present high early-strength reinforced precast or cast-in-place cementitious member.

Cheyrezy et al. (USPN 6,478,867) discloses a concrete mixture which is prepared by mixing water with cement, granular elements, pozzolans and constituents capable of improving the toughness of the matrix, metal fibers, and at least a dispersing agent in specific conditions and proportions.

Cheyrezy et al. '867 differs from the present high early-strength reinforced precast or cast-in-place cementitious member in that the concrete composition disclosed contains metal fibers. The use of metal reinforcement is disclosed in Column 3, Lines 16-18, "In its general form the invention relates to a concrete consisting of a hardened cementitious matrix in which metal fibers are dispersed...."

Therefore, as Cheyrezy et al. '867 discloses the use of metal fibers in its concrete composition it neither anticipates nor makes obvious the present precast or cast-in-place cementitious member which comprises hydraulic cement, polycarboxylate dispersant and structural synthetic fibers.

Pye et al. (USPN 6,503,318) discloses a conductive concrete which uses carbonaceous particles as a conductive phase to produce concrete with low resistivities and specified compressive strengths.

The Pye et al. reference differs from the present high early-strength reinforced precast or cast-in-place cementitious member in that it discloses a method of forming carbonaceous containing concrete compositions which satisfy the conditions for percolation and hence exhibit good conductivity. Column 3, Lines 30-36 Further, Pye et al. states that there must be a certain level of carbon in the concrete composition, such that the, "content of the carbon fiber conductor is increased to a threshold value, whereby conductivity rises dramatically by several orders of magnitude. After the dramatic rise in conductivity, further increases in carbon fiber content leads to minimal changes in the conductivity. It is believed that at low conductor particle or fiber content, many of the conductor particles are insulated by the cement paste and are not in electrical contact with neighboring particles. Column 2, Lines 59-66

Therefore, as Pye et al. discloses the use of carbonaceous material in certain amounts to provide electrical conductivity to concrete mixtures it neither anticipates nor makes obvious the present high early-strength reinforced precast or cast-in-place cementitious member which develops a high early-strength of at least 1400 pounds per

square inch (psi) flexural strength and at least about 7500 pounds per square inch (psi) compressive strength within about 24 hours after placement.

Moersch et al. (WO 2002016281) discloses low-fiber content concrete compositions which are produced by mixing water with a hydraulic binder composition which comprises (a) a cement, (b) ultra-fine elements for pozzolanic reactions, (c) granular elements, (d) cement additives, (e) an amount of water added to the mixture and (f) a dispersing agent. The Moersch et al. reference differs from the present high early strength reinforced pre-cast or cast-in-place cementitious member, in that it discloses a concrete composition that contains low amounts of fiber, wherein the low fiber content does not negatively affect eventual strength development. Therefore, as Moersch et al. does not disclose a combination of structural synthetic fibers and polycarboxylate dispersant in a cementitious mixture to produce a pre-cast or cast-in-place member which develops high early strength, but rather discloses the use of low amounts of fiber in a cementitious composition, it neither anticipates nor makes obvious the present pre-cast or cast-in-place cementitious member.

In regards to all the above cited prior art references, as stated in the accompanying Declaration Under 37 C.F.R. §1.132, the high early-strength of the reinforced cementitious member (flexural strength of at least 1,400 pounds per square inch and compressive strength of at least 7,500 pounds per square inch within about 24 hours after casting the cementitious composition) is not produced simply by the fibers but rather by a combination of strength generating ingredients, the structural synthetic fibers, hydraulic cement and polycarboxylate dispersant, allowing for the production of thinner, lightweight sections. The combination allows for the replacement of steel fibers and steel rebar by structural synthetic fibers in cementitious members which prevents the potential for corrosion and permits reduction of the size of the cementitious members.

By not using steel rebar supports, the cementitious member sizes can be reduced, leading to reduced deadload on the structure, allowing for less or lower strength supporting cementitious members to be used, a reduced volume of cementitious composition needed to cast the smaller cementitious members, a reduced weight of the cementitious members cast, and, if they are pre-cast pieces, freight costs can be significantly reduced, coupled with

reduced crane size for placing cementitious members on the structure.

In view of the remarks contained above, Applicants respectfully request reconsideration of the application, withdrawal of the 35 USC §102 (a and b) and §103(a) rejections, and request that a Formal Notice of Allowance be issued for claims 1-84. Should the Examiner have any questions about the above remarks, the undersigned attorney would welcome a telephone call.

Respectfully submitted,

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